Abstract

• **Objective:** To describe a comprehensive, population-based weight management program.
• **Setting:** A large, not-for-profit integrated health care delivery system.
• **Program:** The initiative focuses efforts in 5 areas: (1) clinical management, (2) community partnerships, (3) legislation/public policy, (4) successful practices dissemination, and (5) research. Implementation of guidelines and programs is local, allowing regions to maximize impact by leveraging tools, services, and new technologies in ways that best suit their unique operational structures.
• **Results:** Initiative-based interventions have been implemented in the areas of prevention and treatment of obesity in children and adolescents, preventing overweight and obesity in adults, identifying and managing adults at high risk of an adverse medical event, and treating severe obesity.
• **Conclusion:** Weight management is a complex and rapidly evolving field that requires key partnerships and a multidisciplinary team approach to target interventions effectively.

The prevalence of overweight and obesity in the United States has steadily increased over the past 50 years, most dramatically in the 1990s [1]. In 1994, 23% of the U.S. population was obese—up from 15% in 1980 [1]. By the year 2000, the prevalence of obesity jumped to 31%. Obesity is associated with many comorbidities, including heart disease, diabetes, stroke, high blood pressure, and certain cancers [1]. The high costs of obesity are well documented. Average annual costs of medical care are 37% higher for obese patients than for those of normal weight [2]. Obese individuals spend 36% more on health care services and 77% more on medications than people of normal weight and incur costs greater than those of smokers or problem drinkers [3].

Some plans are experimenting with population-based approaches to manage weight. In January 2002, Kaiser Permanente (KP) launched the multipronged Weight Management Initiative (WMI) to address this critical public health problem.

Overweight and obesity heavily impacts the lives of KP members, not only through increased morbidity and mortality and decreased quality of life but also through increased absenteeism, discrimination, and reduced productivity. In this paper, KP’s strategic model for weight management, key learnings to date, and future directions are described.

**Setting**
KP is the nation’s largest not-for-profit integrated health care delivery system, comprising 8 operating regions and serving more than 8.1 million members in 9 states and the District of Columbia. Approximately 11,000 physician providers join regional partnerships or professional corporations that contract with the not-for-profit Kaiser Foundation Health Plan. Nationwide, KP also employs approximately 134,000 technical, administrative, and clerical staff.

**Weight Management Initiative**
The KP-Care Management Institute (CMI) WMI addresses the issue of overweight and obesity by focusing efforts in 5 areas: (1) clinical management, (2) community partnerships, (3) legislation/public policy, (4) successful practices dissemination, and (5) research. In carrying out these efforts, KP-CMI uses elements from the chronic care model [4], including health care teams, evidence-based guidelines, and rigorous common measurement systems. KP-CMI collaborates with clinicians in all aspects of program development, implementation, and measurement. Implementation of guidelines and programs is local, allowing regions to maximize impact by leveraging products, tools, services, and new technologies in ways that best suit their unique operational structures.

**Clinical Management**
The WMI approaches clinical management through educating clinicians, creating evidence-based guidelines, and testing innovative approaches. The KP-CMI Weight Management Clinical Network, consisting of KP clinicians, researchers,
registered dietitians, health educators, and nurses, provides direction for the initiative.

The approach is translated into action through 4 subgroups:

- Prevention and treatment of overweight in children and adolescents
- Primary prevention in adults
- Identifying and managing high-risk patients
- Managing bariatric surgery

Each multidisciplinary, interregional subgroup defines the scope, goals, and deliverables for specific clinical populations. They mobilize interest and support and identify opportunities for implementing programs and interventions. Each subgroup creates mechanisms to identify and involve stakeholders throughout KP and to communicate with clinicians and employees.

Each subgroup identifies 2 or more short-term (6 months) goal and at least 1 longer-term (12–18 months) goal. Potential interventions are prioritized based on multiple factors, including available evidence. The subgroups integrate culturally competent care, self-care/shared decision making, and environmental, social, and behavioral determinants of overweight and obesity into work plans and deliverables.

The subgroups must balance the large scope of the obesity epidemic with limited resources. Potential activities are prioritized based on the goals of the subgroups and the WMI as a whole. The Clinical Network has been essential in providing direction.

Community Partnerships

KP collaborates with Centers for Disease Control and Prevention (CDC) and HealthPartners to translate and disseminate recommendations and promising practices for obesity prevention and control in medical care settings. The workgroup is translating recommendations from the CDC’s Guide to Community Preventive Services [5], which provides evidence-based recommendations regarding population-based interventions to promote health and prevent disease based on systematic reviews. The topic areas being addressed by this workgroup are physical activity and obesity. The group is also examining evidence not reviewed in the guide to develop promising practices for addressing obesity in health plans and other health care delivery organizations.

KP also works with schools and community-based clinics to provide training, tools, and education. An interactive theatre experience developed by KP’s Educational Theatre Programs, “Zip’s Great Day,” uses comedy, music, dance, and puppetry to help inspire kindergarten through 5th-grade students to make healthy decisions about food and exercise.

KP-CMI partnered with the TV TurnOff Network to launch KP TV Turnoff Week in 2004. The program, implemented in KP medical centers and local school districts, promoted physical activity by encouraging children to avoid TV viewing for 1 week. KP cosponsored the National TV Turnoff poster and worked with the TV Turnoff Network to provide tools, event ideas, contact information, and implementation toolkits. All KP regions participated; regional events included a KP-sponsored “swim night” when members enjoyed free access to a local pool. Reduced TV viewing time is a clinical goal of the pediatric obesity prevention and treatment subgroup.

KP-CMI cosponsors farmers markets at 10 KP medical centers. The markets vary in their unique setups and hours of operation, but share the common goal of improving access to healthy, affordable food for KP employees and members.

Legislation/Public Policy

In August 2003, KP-CMI and KP’s Institute for Health Policy, along with the American Association of Health Plans, CDC, HealthPartners, the Robert Wood Johnson Foundation, and the Washington Business Group on Health, sponsored a roundtable discussion entitled, “Prevention and Treatment of Overweight and Obesity: Toward a Roadmap for Advocacy and Action.” The meeting brought together stakeholders from a wide spectrum, including policy makers; health care delivery systems; researchers; and representatives of employers, the food industry, schools, and nongovernmental organizations directly affected by the impact of obesity. Participants sought to identify the components of a guiding framework for a comprehensive approach to obesity management and to identify and prioritize strategies. The group generated suggested policies and actions targeting 7 areas of concern: schools, worksites, community programs, community design, the food industry, the health care system, and communication and public advocacy.

Successful Practices Dissemination

The WMI shares learnings about successful practices broadly within and outside of KP. In 2002, KP conducted a review of existing weight management and bariatric programs across the regions, including tools and training materials in use. The review resulted in the Sourcebook, an informational resource covering core elements of KP’s weight management programs and supporting the business case for weight management.

The WMI also shares best practices through presentations to groups such as the Institute for Clinical Systems Improvement/Institute for Healthcare Improvement Colloquium on Clinical Quality Improvement, Disease Management Association of America, and America’s Health Insurance Plans. Themes covered in these discussions include
epidemiology of obesity, prevention and treatment of overweight and obesity in children and adolescents, how to talk with patients about obesity, and clinician training to manage obesity.

KP-CMI also shares tools created to support clinicians and members. The body mass index (BMI) wheel, for example, allows for easy calculation of BMI in adults and children. Two posters provide key messages and a readiness to change assessment tool (Figure). The inclusion of a “readiness ruler” allows patients to determine their readiness to change and assists the clinician in exploring ambivalence about goal setting. To date, over 7000 BMI wheels, 15,000 pediatric posters, and 5000 adult posters in English and Spanish have been disseminated across KP and community clinics.

KP hosts a twice-yearly conference for clinicians working in primary care settings covering a broad array of issues facing clinicians, including weight management. Educating clinicians on techniques to manage obesity in a busy practice emphasizes the importance of assessing and using BMI to identify risk status, using the readiness-to-change approach to address overweight and obesity, and using appropriate vocabulary to minimize stigma and the experience of discrimination.

Research Network
The Clinical Research Network for Overweight and Obesity, consisting of KP researchers in obesity, was formed in mid-2002 to respond in an evidence-based way to the epidemic of excess weight. The group also triages requests for collaborative activities from outside researchers.

The KP Garfield Memorial Fund is funding 8 research and demonstration studies, including a family-based intervention for children, a study to develop a registry for bariatric surgical patients, a weight maintenance program for graduates of youth weight loss programs, a culturally adapted weight loss program for African American women, and a program to help obese patients avoid knee surgery. These studies will help lay an evidence-based foundation for developing, evaluating, and sharing proven models of obesity prevention and treatment.

Measurement
The WMI launched a national effort to assess the size of the KP overweight and obese population and relevant process and outcomes measures. An interregional, interdisciplinary group of clinical and measurement experts identified appropriate and feasible measures, recommending 40 distinct data
elements that identify the population and track over 19 measures (Table). Data elements are also integrated into the Clinical Outcomes Reporting and Evaluation (CORE) System, which includes information on almost 2 million KP members with chronic conditions like asthma, coronary artery disease, chronic pain, depression, diabetes, and heart failure. Adding the weight management cohort to CORE enables the examination of comorbid conditions and the impact of overweight and obesity on disease-specific outcomes for other chronic conditions.

Data collection began in 2003 with pilot reporting by 2 regions to estimate the completeness and availability of key identifiers of overweight and obesity, such as capturing BMI in electronic data systems. Broad implementation of the measurement set by 5 KP regions followed in 2004. Analysts in each region implement identical specifications and definitions to pull comparable data from their unique data systems. The data are centrally analyzed and reported by KP-CMI.

The biggest challenge to measurement work has been limited capture of key indicators. In 2 KP regions with long-standing electronic medical records, only 60% of members had a valid BMI recorded in 2003. This data gap hinders accurate assessment of population size and meaningful interpretation of process and health outcomes measures. Many KP regions have effective initiatives in place to improve capture and coding of weight, height, and/or BMI in their electronic data systems. In addition, BMI will be recorded in KP HealthConnect; the electronic medical record is being deployed programwide.

Little data are available to understand the cost-effectiveness of weight management programs. A recent KP analysis indicated decreased health care costs for participants in a formal weight management program who lost weight compared with participants who did not [7]. A modeling study examining the effects of a sustained 10% weight loss on costs related to comorbid diseases indicated reduced expected lifetime costs of $2200 to $5300 [8].

**Table. Elements of KP-CMI’s Weight Management Initiative Measurement Set**

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
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<tbody>
<tr>
<td>Cohort identification according to 1 or more inclusion criteria:</td>
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<tr>
<td>Recorded body mass index &gt; 25</td>
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<tr>
<td>Recorded weight &gt; 250 lb</td>
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<tr>
<td>Dispensing of weight management medication</td>
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<tr>
<td>Diagnosis of overweight or obesity</td>
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<tr>
<td>Bariatric surgery</td>
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<tr>
<td>Documentation of weight management behavioral health or case/care program enrollment or referral</td>
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<tr>
<td>Health services utilization (eg, inpatient discharges, inpatient days, emergency department visits)</td>
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<td>Laboratory measures (eg, LDL cholesterol)</td>
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<tr>
<td>Pharmacy utilization (eg, antidepressants, vasodilators, aspirin)</td>
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<tr>
<td>Frequency of bariatric surgery, including 30-day readmission rates</td>
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</table>

Regional structures, and key weight management leaders and constituencies were included from the beginning. The creation of the advisory group infrastructure helped to identify ways the WMI could impact overweight and obesity through prevention and treatment across populations and age ranges, dividing an enormous task into logical pockets of activity. Convening work groups to develop short- and long-term goals allowed the WMI to harvest “low-hanging fruit” in the short term and defer more complicated goals for the long term.

3. Consider outcomes measurement from the beginning. Credible measurement is key to quality improvement. From the beginning, the WMI focused on what could be measured consistently and relatively easily, such as BMI. BMI, while not a perfect measure of risk status, provides an easy to use, basic stratification measure. Most importantly, focusing on measurement from the outset ensures that outcome measures are comparable over time, distance, and different risk groups.

4. Use a population-based approach to weight management. A population-based approach includes risk stratification with appropriate interventions for each risk group. By linking risk groups with appropriate interventions—based on the best available evidence—addressing overweight and obesity is more efficient and effective.

5. Support evidence-based practice. To reduce unnecessary variations in care and target interventions effectively, successful practices must be identified and disseminated throughout the organization. However, weight management is a rapidly evolving field, and significant gaps in the evidence still exist. A lack of conclusive...
6. Support clinicians and members in treating obesity and overweight as a chronic condition.
Care management for chronic conditions includes prevention, treatment, and health maintenance; obesity must be considered in the same framework. Unlike other chronic conditions, however, obesity is not a specialty per se. Medically supervised specialized weight loss programs for severely obese patients exist within KP in limited numbers. In their absence, tools and trainings provide support clinicians need to initiate conversations and help members manage their weight. KP-CMI supports clinicians by providing scripts for visits, handouts, and training in motivational interviewing. Similarly, members need easy to use tools. KP-CMI’s WMI developed an action plan that helps members explore barriers to achieving identified goals and track their success, keeping dialogue about weight management open.

7. Provide multiple options for weight management.
Providing multiple options helps all members manage their weight. In addition to online tools, there are classes, telephone care, and one-on-one counseling. Group classes with different emphases—culture-specific content, weight management as part of living with a comorbidity, and the like—broaden the menu. KP has partnered successfully with other national entities to help provide these learning opportunities for members.

8. Recognize cultural variations.
Including culturally competent care approaches must be part of any comprehensive weight management program. By setting a program-level agenda for weight management and helping regions implement it in ways that are sensitive to local cultural variations, a cohesive overall structure and responsiveness to cultural differences can be maintained. By developing and providing tools, posters, and tipsheets in English, Spanish, and Chinese, KP-CMI has started to address cultural variation. Future work must explore the need for culturally-based weight management programs that are sensitive to beliefs about nutrition and physical activity in different cultures.

9. Employ a multidisciplinary approach.
Convincing evidence acknowledges the impact of clinician advice on member behavior. However, weight management requires a team approach. Medical assistants can use the BMI wheel and chart the result. Nurses can convey important messages. Consider which roles optimize the skills of each team member, including registered dieticians, health educators, and behavioral health specialists. Use existing team models of care and experiment to find what works in your system.

10. Keep program design flexible.
Disseminate successful practices, incorporating learnings from difficulties and failures. Learn from the most current base of experience and expect to evolve rapidly.

11. Develop partnerships.
Attempting to address overweight and obesity solely from within the health care sector is not in itself effective. Over time, broad coalitions will ultimately turn the tide of the obesity epidemic as healthy options for eating and exercising increase and the culture gradually changes. People will need support from their environment to sustain long-term change.

Conclusion
Weight management is a highly complex and rapidly evolving field, requiring an interdisciplinary effort that transcends the health care delivery system. KP’s WMI represents an attempt to implement such an effort. Developed in phases, phase 1 included building the infrastructure by defining key populations, creating clinical workgroups, and developing short- and long-term goals. Phase 2 defined a broader strategy that explored the roles of research, legislation and policy, successful practices dissemination and the community in expanding the reach of the tools and programs developed through the clinical subgroups. A number of key partnerships were developed.

Phase 3 saw the WMI strengthen partnerships through sharing tools with community clinics, training community clinicians to assess and manage overweight in children and adolescents through motivational interviewing. KP-CMI also cohosted a policy roundtable that identified key areas for policy development to support the prevention and treatment of overweight and obesity. An internally funded weight management research initiative was created to set a research agenda for KP.

KP-CMI WMI is now in its fourth phase. Current work places a strong emphasis on deepening strategic partnerships by setting joint goals and agendas that allow for a continued expansion of clinical management, education, policy development, and formation of more structured relationships with community clinics.

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